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THIS SPRING AT THE ARBORETUM

UNUSUALLY warm weather this year has forced many trees and shrubs into very early flower. The Japanese cherries bloomed approximately ten days early, and the crabapples will be in bloom nearer the first of May rather than the middle of May as is usually the case. Weather is always an unknown quantity, and if all the days were as cold and dreary as the one on which this is being written the Japanese cherries might well remain in bloom for sometime.

Considerable interest has been shown by the public this year in the cherries, and newspaper reporters estimated that about 35,000 people visited the Arboretum on Sunday, April 24, when they were at their best. This shows an unusually early interest in the collections at the Arboretum. Because of the warm weather, *Prunus Sargentii* lasted about three or four days, but *P. subhirtella*, *P. subhirtella autumnalis*, and *P. yedoensis* all lasted a full week. *Prunus incisa* was particularly well flowered this season, and the plants of the double-flowered *P. triloba* are still in splendid condition.

Amelanchiers of various species have been in full bloom for several days this week. Professor Sargent placed many at outstanding points of interest so that their conspicuous white blossoms are seen everywhere and impress upon visitors the fact that spring has come to stay. Although they do not hold their flowers more than a few days in warm weather, they are true harbingers of spring.

Magnolias

The magnolias have been in excellent condition, particularly the early flowering *Magnolia stellata* which was in good shape for over a week, while *M. kobus borealis* also did very well. One large specimen of this interesting, tall-growing tree (it is the tallest growing of all the Asiatic magnolias) close to the Administration Building has been observed by several people who ask why it does not flower well. This year it had only a few scattered flowers, as it did last year and the year before that. Unfortunately, because of this some think that the variety does not bear flowers well until it is considerably older.

However, a close examination of this particular tree will show that it has been girdled for over three-fourths of the way around the base of the trunk, apparently by mice or rabbits. No tree can be expected to have good blossoms under such circumstances. There is a tree of the same variety, between the Administration Building and the wall along the Arborway, that is only about eight feet tall, but is literally covered with blossoms, showing that the variety does bear early flowers providing it is in good health and the soil conditions are favorable. *Magnolia denudata* and *M. Soulangeana* flower buds were somewhat injured by a late cold snap early in April. It is of interest to note again the hardiness of the flower buds of *M. stellata* and *M. kobus* and its variety, which, though they were considerably farther advanced than the flower buds of *M. Soulangeana*, were not injured in the least by this cold spell.

New Foliage Appearing

Right now the Arboretum is clothed in a mantle of many shades. The new foliage of certain plants varies considerably in color when it first appears. Some, like the early *Prinsepia sinensis* and *Berberis Thunbergii*, show a bright green. Others, like *Viburnum Lentago*, and certain species of *Betula* and *Evonymus*, are bronze and blend splendidly with the other shades. On the other hand, the Japanese maples and some of the *Ribes* species have young foliage which at first is bright red. The Schwedler's maple and *Cercidiphyllum* also possess a fine reddish-bronze color early in the season, though the color of the former may last for a considerable period, finally changing to a dark green by the end of the summer.

Many people fail to appreciate the beauty of the early spring foliage. This is only natural, since spring usually comes with a rush and there are so many conspicuous flowers to draw our attention that we do not take the opportunity to admire all the different kinds of leaves. However, from the top of Bussey Hill or Peter's Hill, there is now, a splendid view of this early foliage. It is interesting to stand on such a high point either in the Arboretum or anywhere else where there are a number of trees and try to identify the various trees and shrubs from a distance simply by this early foliage color. A larch will be easily spotted because of its bright green color and definitely pyramidal growth habit. Beeches will be noticed because of their gray bark and delicately hazy green leaf-color. The oaks can be readily determined by the late appearance of their young leaves which vary in color from a deep yellow to a good bronze or gray-green. A careful observation of these plant characteristics at this time will lead to a greater appreciation of the beauty of the spring as it gradually unfurls, changing color from day to day.

The crabapples are fast approaching their blooming season—ahead of time. From the appearance of the large number of flower buds on the trees it looks as if the flower display in this collection will be unusually good. *Malus baccata mandshurica* is in bloom now, and other



PLATE II

Malus baccata mandshurica, now in full bloom,
is the first of the Asiatic crabapples to flower.

species and varieties will be coming out during the week. These plants are all subjected to that phenomenon of nature—alternate bearing. They have good crops of fruit one year and poor the next. In fact there is one tree in the older crabapple collection at the base of Peters' Hill which has a line of demarkation that can be easily seen almost every year. Half the tree blooms and fruits well one year, while the other half does not. The next year this is reversed. By a complicated system of fertilizing over a period of years, orchardists are able to control this to some extent. Experimentally the alternate bearing of one half of a tree has been obtained by special fertilizing. Normally, however, there is little that the average home owner can do about this interesting phenomenon. If the trees are well taken care of and in splendid growing condition, fertilized each year, the alternate bearing may not be so pronounced as it is in starved trees. Particular attention should be given to *Malus Lemoinei* this season. Last year one small plant had the darkest flowers of any of the *Malus* group. If any Bulletin readers have this tree, please send in notes on the color of its flowers, since it apparently has good possibilities as an ornamental flowering tree.

Plant Breeding

Those visiting the Arboretum this spring will undoubtedly see many cellophane bags on trees and shrubs everywhere. This is evidence of a considerable amount of plant hybridizing now being done on the grounds by staff members, under the supervision of Dr. Karl Sax of the Arboretum staff. There are several reasons for this activity. In the first place, the Maria Moors Cabot Foundation for Botanical Research was established on a long-range research program for increasing the production of cellulose by plant breeding, particularly tree breeding. Part of this work is being done in the Arboretum, particularly that part dealing with the hybridization of trees by artificial pollination in order to evolve more rapidly growing strains. Although this is only a small part of the work, it is the part which an Arboretum visitor notices.

Other hybridization is being done with the ornamental plants in order to study them more carefully from a genetical point of view and also with the chance that new hybrids may be obtained of ornamental value. Those who read a recent article in the Saturday Evening Post on the breeding work with marigolds may realize the tremendous numbers of individuals which should be grown. In any such breeding work the more individuals grown, the better the chances for variation. Woody plants are slow in reaching maturity and often it is ten to twenty years before they flower. Consequently such a program necessarily must be carried out over a long period of years, particularly when the number of individuals grown is as severely limited, as it is in the Arboretum where space is at a premium. Hundreds of crosses are being made among outstanding ornamentals in the hope that some may yield new or interesting garden plants.